

**ATTACHMENT 3**

**Representative Asbestos NPDES Operational Information**

<b>Wastewater from the hydroblasting prior to discharge (Process flow, equipment involved, typical flow rate etc.)</b>	<b>Control Equipment Information (Type, Size and dimensions, monitoring, Efficiency)</b>	<b>Inspection and Maintenance Information (how often are they inspected, replacement frequency)</b>	<b>Wastewater discharged per NPDES Permit</b>
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in a 29,845 -gallon process sump via trenches . The process sump is constructed of concrete and is 7-feet deep x 15 -feet wide x 38 -feet long and consists of two sections (north and south) separated by an overflow weir. The south sump is equipped with three agitators and a chopper pump. The chopper pump reduces the size of the solids while the agitators keeps the diaphragm material in suspension. In case of a high level, the south sump can overflow to the north sump. Feed pumps from both sumps can transfer the material to the filter press. The feed pumps are air-powered double diaphragm pumps which use 90 SCFM at 80 psig of dry air while pumping 100 gpm at 30 psig of liquid to start and 15 SCFM at 100 psig of air while pumping 10 gpm at 98 psig of liquid as the filter press become full with filter cake. The filter press with 40 plates with 38 chambers is equipped with polypropylene filter elements which are designed for efficient separation of solid from liquid . When the filter cycle is complete and the chambers are completely filled with solids, a hydraulic ram is retracted and each filter element is separated individually to remove the “de-watered” solids between the plates into a super sack for offsite disposal. The filtrate from the filter press passes through one of two sets of filter press effluent filters. The filter vessels are approximately 2’2 ¾” tall, 8 7/8” in diameter, and are constructed of stainless steel. The filter comes equipped with a</p>	<p>Filter Press Capacity: Volume of 23 ft<sup>3</sup> (expandable to 27 ft<sup>3</sup>) and a net filter area of 412 ft<sup>2</sup> (expandable to 487 ft<sup>2</sup>). Design Pressure: 100 psig</p> <p>Filter Press Media Make: Polypropylene, filter cloth type is Madison-99F.</p> <p>Filter Press Effluent Filters Design Pressure: 150 psi Filter Media: 100 micron polypropylene bags</p>	<p>100 Micron Filters bags are replaced based on differential pressure across the filters.</p> <p>Filter cloths are replaced as needed on the filter press.</p>	<p>The wastewater associated with this operation is routed to the plant effluent system for discharge through a NPDES permitted Outfall.</p> <p>Sampling: Two samples of NPDES outfall were collected on October 14, 2002 and on July 1 through July 2, 2009 to support a permit renewal application. These samples were analyzed for asbestos using EPA test method EPA 100.2 . Sample analytical results of the outfall discharge were 1.05 MFL and Non Detect, respectively; well below the Federal Safe Drinking Water Act Standard of 7 MFL (Fibers &gt;10 micrometers).</p>



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<p>316 Stainless Steel restrainer basket. These filters are intended to remove asbestos fibers from the filter effluent before it is pumped to the plant permitted outfall. Each filter set consists of two individual filters with 100 micron filters.</p>			
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in two 13,000-gallon process sumps via trenches. The process sumps (2A and 2B) are separated by an overflow weir. The sumps are equipped with agitators which keeps the diaphragm material in suspension. This suspended material is then pumped to a filter press used to “dewater” the spent diaphragm. The de-watered solids are removed from the filter press plates and placed in a super sack for offsite disposal. The filtrate from the filter press passes through one of two sets of filter press effluent filters. The filters have stainless steel housings with a design pressure of 150 psig, maximum flow of 100 gallons per minute. Each filter set consists of two individual 100 micron filters. The discharge from these filters is combined with other wastewaters prior to discharge through a NPDES permitted outfall.</p>	<p>Filter Press</p> <p>Filter Press Effluent Filters Design Pressure: 150 psi Filter Media: 100 micron polypropylene bags</p>	<p>Effluent filters bags are replaced based on differential pressure across the filters.</p> <p>The filter press itself is subject to a Preventative Maintenance every 4 months.</p> <p>The filter press fabric is inspected after each press operation and subsequent cleaning. The cloth fabric media itself is not subject to a specific PM but is replaced as needed.</p>	<p>The wastewater associated with this operations is routed to the plant effluent system for discharge through a NPDES permitted Outfall.</p>
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in a 12,500-gallon process sump via trenches. The sump is equipped with an agitator which keeps the diaphragm material in suspension. This suspended material is then pumped to a Hydro sieve and screw press filter which is used to “dewater” the spent diaphragm. The de-watered solids removed via screw press are placed in a super sack for offsite disposal. The liquid is routed to another 39,500-gallon sump. There is an overflow weir between the two sumps in case of a high level. The suspended material in the second sump is then pumped to a filter press filter which is used to “dewater” any</p>	<p>Hydro Sieve Capacity: 900 gpm</p> <p>Filter Press</p> <p>Filter Press Media 800 mm intermediate polypropylene cloth with a welded HPR and latex edge seal</p>	<p>Filter press is cleaned when the inlet pressure reaches 90 PSI. Sight glass between the filter press is monitored by operators for any visible fibers.</p> <p>No maintenance PMs or inspections associated with the filter press.</p> <p>Sock filters are inspected daily by operators and to be changed out when delta P reaches 10 psi across the filter.</p>	<p>The wastewater associated with this operation is routed to the plant effluent system for discharge through a NPDES permitted Outfall belonging to a neighboring co-located facility.</p>

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<p>remaining solids which are placed in a super sack for offsite disposal. The filtrate from the filter press passes through one of two sets of filter press effluent filter in series. Each filter set consists of two individual filters with different filter sizes; one 100-micron and one 10 -micron filter. The discharge from these filters is comingled with other wastewaters prior to discharge through a NPDES permitted outfall.</p>	<p>Filter Press Effluent Filters 10 micron; 100 micron</p> <p>Polyester Filters are 32" long and have 99% Absolute efficiency</p>		
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in a 1,500 gallon agitated process sump located inside the cell renewal building via trenches and routed to a 12-foot diameter, 10.5-foot tall filter press feed tank. The filter press feed tank with a capacity of approximately 7,000 gallons is equipped with an agitator which keeps the diaphragm material in suspension. This suspended material is then pumped to a filter press. The filter press is used to "dewater" the spent diaphragm. The filter press is equipped with a pressure gauge. When the gauge reaches 60 psi this indicates that the press is full. The de-watered solids are removed from the filter press and placed in a super sack for offsite disposal. The filtrate from the filter press passes through a mesh screen prior to being discharged to the sanitary sewer to the local POTW. The presence of large amounts diaphragm material on the mesh screen would be indicative of a problem with the filter press screens.</p>	<p>Filter Press Feed Tank: Steel, 12' OD, 10.5' Tall. Has an agitator, level monitoring, and level interlocks.</p> <p>Sump Pump: 360 GPM, 30ft TDH, 7HP, 460V, 1725 RPM.</p> <p>Filter Press Pumps (2): 40 GPM, 135 TDH, air powered (75 PSIG) diaphragm pumps.</p> <p>Filter Press Capacity: 22.6 C.F. Design Pressure 100PSI.</p> <p>pH: Monitored and maintained between 5 and 10.5</p>	<p>Filter press feed tank is inspected externally every 5 years and internally every 10 years.</p> <p>Filter press inspected externally every 3 years and internally every 6 years.</p> <p>Pumps inspected and replaced as needed.</p> <p>The filter press fabric is inspected visually for tears after each press operation and subsequent cleaning. Individual cloths are replaced as necessary.</p>	<p>The wastewater associated with this operation is routed to the plant effluent system for discharge through a permitted outfall to a POTW.</p>
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in a 12,000-gallon process sump via trenches. The sump is equipped with two (2) agitators which keeps the diaphragm material in suspension. This suspended material is then pumped to an 18,000 -gallon filter press feed tank equipped with an agitator. Feed pumps</p>	<p>Filter Press Capacity: 35 cubic feet (max.) Size 40" plates, 39 chambers with 1 ¼" cake Cloth are fabricated filter polypropylene multifilament w/latex edges</p>	<p>Filter Press: The filter press itself is subject to a Preventative Maintenance every 6 months, which includes the hydraulic system, the motor and hoses.</p> <p>The filter press fabric is inspected after each press operation and subsequent cleaning (daily or every other day). Operates only 4 days per</p>	<p>The wastewater associated with this operation is routed to the plant effluent system for discharge through a NPDES permitted Outfall.</p>

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<p>transfer the diaphragm material from the filter press feed tank to a recessed plate filter press which is used to “dewater” the spent diaphragm. The maximum flow rate of the pumps to the filter press is approximately 160 gallons per minute, however flow rates from the feed tank to the filter press vary from 50 – 160 gallons per minute, depending upon the amount of diaphragm material on the press. The de-watered solids are removed from the filter press plates and placed in a super sack for offsite disposal when the flow rate to the filter press drops to 50 gallons per minute. The filter press produces approximately 1.3 cubic yards of cake.</p> <p>The target flow rate of the filtrate leaving the filter press is approximately 15 gallons per minute. The filtrate from the filter press drains to two secondary cartridge filters that operate in parallel, prior to discharging to the plant effluent system for discharge through a NPDES permitted Outfall.</p>	<p>Filter Press Media Multifilament Cloth with Latex Edges</p> <p>Secondary Cartridge Filter Carbon Steel, Halar-Lined Bag Housing</p> <p>Filter Media 8 micron bag filter with an efficiency rating of &gt; 90%.</p>	<p>week. Individual cloths are replaced as necessary. The cloth fabric media itself is not subject to a specific PMbut is generally replaced entirely every two years.</p> <p>Secondary Cartridge Filter: The secondary filters (2) are not monitored, however they are changed out after every other filter press operation. The presence of diaphragm material on the secondary filters would be indicative of a problem with the filter press screens.</p>	
<p>Water generated from hydro blasting of spent asbestos cell diaphragms as well as all wash down water is collected in a process sump located inside the cell renewal building via trenches and routed to a filter press feed tank. The filter press feed tank with a 12-foot diameter has a capacity of approximately 12,650 gallons. Feed pumps transfer the diaphragm material from the filter press feed tank to a filter press. The filter press is used to “dewater” the spent diaphragm. Pressure is monitored on the filter press feed line to provide an indication on when to remove the de-watered solids from the filter press plates and place them in a super sack for offsite disposal. Water from the press is filtered through the filter press screens and the filtrate leaving the filter press passes through a filter press effluent filter</p>	<p>Filter Press Capacity - 12 Cubic foot</p> <p>Filter Press Media 100% Polypropylene, 7 oz. sq. yd. approx. 15-micron.</p> <p>Filter Press Effluent Filter 10-micron polypropylene filter sock.</p>	<p>The filter press screens are cleaned and inspected each work day. The screens are also cleaned when the feed line pressure increases indicating pluggage.</p> <p>The filter press effluent filter sock is inspected and replaced each time the filter press screens are cleaned. Visual inspections of this sock are performed looking for larger particles that would indicate a problem with the filter press screens. Screen cleaning and inspections can occur up to 20 times per month depending on the number of cell changes.</p>	<p>The wastewater associated with this operation is discharged into an onsite injection well.</p>

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prior to discharge to the plant's permitted deep well system.	Pressure Monitoring – Filter press feed line pressure is monitored by a line pressure gauge. The filter press feed pump shuts down at 100 psi.		
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